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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,618	04/19/2001	Mitsuhiro Nishida	K-1974	8068

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KANESAKA AND TAKEUCHI
1423 Powhatan Street
Alexandria, VA 22314

EXAMINER

NGUYEN, KIMBERLY T

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 10/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/837,618

Applicant(s)

NISHIDA ET AL.

Examiner

Kimberly T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 22 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 22 and 25, it is not clear whether the precursory layer and the layer having the high index of refraction are the same layer or are separate layers.

In claim 15, it is not clear what "minute particles which have low friction coefficients" are.

The terms "minute" and "low" in claim 15 are relative terms which renders the claim indefinite. The terms "minute" and "low" are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-5, and 9-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Oka et al., U.S. Pat. No. 6,335,832 B1.

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Oka shows an antireflection film comprising a polyester organic substrate film (column 13, lines 19-32), an acrylic hard coat layer of at least 3 microns in thickness (column 13, lines 33-67), a high refractive index layer, and an acrylic resin low refractive index layer (surface layer) (column 26, lines 1-16 and column 42, lines 24-37) wherein the layers comprise ionizing radiation curable acrylic resins (column 13, lines 59-67). Oka shows that ultrafine particles of metallic oxide which provide electrical conductivity are embedded in the hard coat layer (column 9, lines 35-53 and column 11, line 64 to column 12, line 10 and column 22, lines 17-20). Oka shows that the high refractive index layer has a refractive index which is higher than that of the hardcoat layer which has a refractive index of at least 1.63 (column 27, line 31 to column 29, lines 36). Oka shows that the refractive index of the low refractive index layer (surface layer) is about 1.35-1.45 (column 29, line 41 to column 30, line 35) and comprises inorganic particles with low refractive indices and hardness.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oka et al., U.S. Pat. No. 6,335,832 B1.

Oka is relied upon as above for claim 1.

Oka does not specifically show that the layer having a high index of refraction has electrical conductivity as in instant claim 6. However, Oka shows a functional ultrafine particle

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layer comprising metal oxide particles such as TiO_2 and ZnO (column 11, line 64 to column 12, line 10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the metallic oxide particles in the hardcoat layer since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

Though Oka shows that the transparent function film and the triacetyl cellulose film has a total light transmittance of at least 92% (column 43, lines 61-67), Oka does not specifically show that the light transmittance of the hard coat layer is greater than 85% and the surface electrical resistance as in instant claim 8. However, such ranges are properties which can be easily determined by one of ordinary skill in the art. With regard to the limitation of the ranges, absent a showing of unexpected results, it is obvious to modify the conditions of a composition because they are merely the result of routine experimentation. The experimental modification of prior art in order to optimize operation conditions (e.g. ranges) fails to render claims patentable in the absence of unexpected results. All of the aforementioned limitations are result effective as they control the light transmittance and level of electrical conductivity and antireflectivity of the antireflection film. As such, they are optimizable. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the antireflection film with the limitations of the ranges since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 16-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oka et al., U.S. Pat. No. 6,335,832 B1.

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Oka shows an antireflection film comprising a polyester organic substrate film (column 13, lines 19-32), an acrylic hard coat layer of at least 3 microns in thickness (column 13, lines 33-67), a high refractive index layer, and an acrylic resin low refractive index layer (column 26, lines 1-16 and column 42, lines 24-37) wherein the layers comprise ionizing radiation curable acrylic resins (column 13, lines 59-67). Oka shows that ultrafine particles of metallic oxide which provide electrical conductivity are embedded in the hard coat layer and are not more than 200nm in size (column 9, lines 35-53 and column 11, line 64 to column 12, line 10 and column 22, lines 17-20). Oka shows that the high refractive index layer has a refractive index which is higher than that of the hardcoat layer which has a refractive index of at least 1.63 (column 27, line 31 to column 29, lines 36). Oka shows that the refractive index of the low refractive index layer (surface layer) is about 1.35-1.45 (column 29, line 41 to column 30, line 35) and comprises inorganic particles with low refractive indices and hardness such as a fluorocarbon polymer (column 54, lines 1-17).

Oka does not show the specific amount of metallic oxide particles as in instant claim 17 or the amount of material penetrated into the high index of refraction layer as in instant claim 21. Oka does not show the volume percentage of void fraction as in instant claim 24.

However, such ranges of particle concentration and material penetration and percentages of void fraction are properties which can be easily determined by one of ordinary skill in the art. With regard to the limitation of the ranges and percentages, absent a showing of unexpected results, it is obvious to modify the conditions of a composition because they are merely the result of routine experimentation. The experimental modification of prior art in order to optimize operation conditions (e.g. ranges) fails to render claims patentable in the absence of unexpected

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results. All of the aforementioned limitations are result effective as they control the light transmittance, level of electrical conductivity, antireflectivity, refractive index, and voids of the antireflection film. As such, they are optimizable. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the antireflection film with the limitations of the ranges since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 22 and 23 are included because it is a product-by-process claim. Additionally, the terms “is formed...is coated on...penetrates into said precursory layer, and then said material is hardened” and “the solvent is dried or crosslinked” introduces process limitations to the respective product claims. The patentability of a product does not depend on its method of production. If the product in the product by process claim is the same as or obvious from a product of the prior art, the claims are unpatentable even though the prior art was made by a different process. *MPEP 2113*.

Oka does not specifically show that the high index of refraction layer comprises metallic oxide particles as in instant claim 16. However, Oka shows a functional ultrafine particle layer comprising metal oxide particles such as TiO₂ and ZnO (column 11, line 64 to column 12, line 10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the metallic oxide particles in the hardcoat layer since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly T. Nguyen whose telephone number is (703) 308-8176. The examiner can normally be reached on Monday to Friday, except on every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (703) 308-0449. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Kimberly T. Nguyen
Examiner
September 27, 2002

CYNTHIA H. KELLY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

